

REMARKS

Applicants request acknowledgement of the claim for priority and acknowledgement of receipt of the certified Priority Document No. 11-100980, which was filed on April 6, 2000.

Applicants have added claim 11. Therefore, claims 1-11 are pending. For ease of readability of the amended claims, an Appendix of Claims After Entry of Amendments is attached.

Applicants have addressed the 35 U.S.C. § 112, second paragraph rejection by substantially rewriting claims 1-10. Accordingly, the rejection should be overcome.

The claims stand rejected as being anticipated by Smirnov et al (Smirnov), U.S. Patent No. 6,279,009 (claims 1-3 and 5), or Cheng, U.S. Patent No. 6,067,548 (claims 4 and 6-10). Applicants request reconsideration of the rejection for the following reasons.

The present invention is directed to a workflow system for managing work through the use of a plurality of workflow definitions. In particular, the invention provides two types of workflow, i.e. actual execution workflow (actual workflow) as the first type and monitoring workflow (virtual workflow) as the second type. Relationships between the two types of workflow are stored as workflow link definitions as set forth in Figs. 2-4 of the present application.

Progress information of virtual workflow can be acquired according to the present invention. Specifically, nodes whose progress states are necessary for monitoring the actual execution workflow are selected from the actual execution workflow. The selected nodes are linked with nodes of the monitoring workflow or virtual workflow by using the workflow link definitions. In this way, the progress states of the selected nodes of the actual execution workflow can be concisely displayed by mapping them on the virtual workflow.

The process of acquiring virtual workflow progress information is shown in Fig. 10 of the present application. This process makes it possible to acquire the information about how far the inputted virtual workflow has been processed and then to display the information to the user while maintaining system confidentiality with respect to the user concerning other information. See page 30, lines 15-24 of the specification, for example.

According to the present invention, the actual execution workflow definitions can be maintained with restricted access while the monitoring workflow definition can be presented to a cooperative external company that has appropriate access. Then, if the actual execution workflow is changed, the monitoring workflow may not have to be changed because such changes can be absorbed in the actual execution workflow.

Thus, there is a degree of flexibility provided with respect to implementing changes in the system. That is, notifications of changes in the actual execution workflow definitions to the external party who is presented with the monitoring workflow definitions become unnecessary.

In the present invention, a plurality of actual execution workflow definitions may be linked with a single monitoring workflow or virtual workflow definition by means of workflow link definitions. This also provides flexibility in the system. For example, the same monitoring (virtual) workflow definition can be represented to a plurality of parties in different ways as set forth in the specification with respect to the description of Fig. 13A-B.

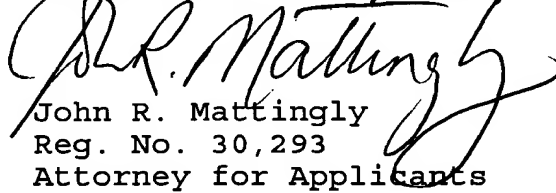
The art of record fails to disclose or suggest the invention as claimed by Applicants which includes the linking of nodes between actual execution workflow and virtual workflow and monitoring or outputting the progress state of an acquired node of the actual execution workflow that is linked with a specified node of the virtual workflow. In particular, in Smirnov, a workflow is produced from a model as shown in Fig. 1 of the patent. The model 10 is a draft having state nodes 12, task nodes 14 and paths connecting the nodes. By choosing a path in the model, a workflow is produced. That is, the workflow that is produced is part of the model. As

shown in Fig. 5 of Smirnov, for example, a model 130 representing a real-world manufacturing environment, can be updated and the workflow can be updated according to the changes in the model. See col. 10, lines 26-34 of the reference, for example. Accordingly, Smirnov does not disclose the claimed combination of the invention set forth in the pending claims and therefore the 35 U.S.C. § 102(e) rejection should be withdrawn.

In Cheng, an organizational model is disclosed that is separated from a process model, an application model and a data model. The system of Cheng includes virtual links for linking member objects belonging to the organization to define relationships between the member objects. See Fig. 3, for example. The virtual link is dynamically evaluated and determined during an execution of the workflow. However, the disclosure of Cheng is insufficient to render the pending claims obvious and therefore the 35 U.S.C. § 102(e) rejection based on Cheng should be withdrawn.

In view of the foregoing amendments and remarks,
reconsideration and reexamination are respectfully requested.

Respectfully submitted,


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APPENDIX OF CLAIMS AFTER ENTRY OF AMENDMENTS

1. (Currently Amended) A method for managing an actual execution workflow for executing a flow of work on the basis of a virtual workflow for monitoring said actual execution workflow, said actual execution workflow and said virtual workflow including a plurality of nodes, respectively, comprising the steps of:

selecting a processing node of said actual execution workflow to make the node thus selected be linked with a node of said virtual workflow;

specifying a node of said virtual workflow;

acquiring a node of said actual execution workflow linked with the node thus specified; and

outputting a progress state of the acquired node as a progress state of the specified node of said virtual workflow.

2. (Currently Amended) The method as claimed in claim 1, further comprising the steps of:

setting a user's privilege of operation at each node of said virtual workflow; and

registering the user's privilege of operation thus set in a virtual workflow definition for defining said virtual workflow.

3. (Currently Amended) The method as claimed in claim 1, further comprising the steps of:

determining an actual execution workflow definition for defining said actual execution workflow by using an attribute of a virtual workflow definition for defining said virtual workflow; and

inputting execution information of said actual execution workflow by using the actual execution workflow definition thus determined.

4. (Currently Amended) A virtual workflow managing system for managing an actual execution workflow for executing a flow of work accessing an actual execution workflow definition for defining said actual execution workflow and a virtual workflow definition for defining a virtual workflow for monitoring said actual execution workflow, said actual execution workflow and said virtual workflow including a plurality of nodes, respectively, comprising:

a storage unit for storing said actual execution workflow definition containing an ID of said actual execution workflow and an ID of each of nodes contained in said actual execution workflow;

a storage unit for storing virtual workflow definition containing an ID of said virtual workflow, an ID of each of nodes contained in said virtual workflow and access

privilege information given to a user using said virtual workflow definition at each node of said virtual workflow; and

a workflow link definition storage unit for storing an ID of a link linking an ID of a node of said virtual workflow with an ID of a corresponding node selected from said actual execution workflow.

5. (Currently Amended) The method as claimed in claim 1, wherein there are a plurality of virtual workflow definitions for defining said virtual workflow, said method further comprising the steps of:

inputting information for selecting virtual workflow definition; and

determining a virtual workflow definition on the basis of said input information.

6. (Currently Amended) In a workflow system having a client and a server, a method for managing an actual execution workflow for executing a flow of work on the basis of a virtual workflow for monitoring said actual execution workflow, said actual execution workflow and said virtual workflow including a plurality of nodes, respectively, said method comprising the steps of:

holding a virtual workflow definition for defining nodes of said virtual workflow according to purpose of use by

said client, an actual execution workflow definition for defining processing nodes of said actual execution workflow and a workflow link definition for linking said virtual workflow definition of nodes of said virtual workflow with said actual workflow definition of selected nodes of said actual execution workflow, on the basis of an indication given from said client;

searching a node of said actual execution workflow corresponding to a node of said virtual workflow specified by said client, based on said workflow link definition; and

outputting a progress state of said searched node of said actual execution workflow as a progress state of said specified node of said virtual workflow to said client.

7. (Currently Amended) In a system having a client and a server, and for managing an actual execution workflow for executing a flow of work on the basis of a virtual workflow for monitoring said actual execution workflow, said actual execution workflow and said virtual workflow including a plurality of nodes, respectively, said server comprising:

an information storage unit for storing a virtual workflow definition for defining nodes of said virtual workflow according to a purpose of use by said client, an actual workflow definition for defining processing nodes of said actual execution workflow and a workflow link definition

for linking said virtual workflow definition of nodes of said virtual workflow with said actual workflow definition of selected nodes of said actual execution workflow;

a processing unit for searching a node of said actual execution workflow corresponding to a node of said virtual workflow specified by said client, based on said workflow link definition; and

a processing unit for outputting a progress state of said searched node of said actual execution workflow as a progress state of said specified node of said virtual workflow to said client.

8. (Currently Amended) In a storage medium readable by a computer for storing a program of a method for managing an actual execution workflow for executing a flow of work on the basis of a virtual workflow for monitoring said actual execution workflow, executed by a sever in a workflow system having a client and said server, said actual execution workflow and said virtual workflow including a plurality of nodes, respectively, said method comprising the steps of:

holding a virtual workflow definition for defining nodes of said virtual workflow according to a purpose of use by said client, an actual execution workflow definition for defining processing nodes of said actual execution workflow and a workflow link definition for linking said virtual

workflow definition of nodes of said virtual workflow with said actual workflow definition of selected nodes of said actual execution workflow, based on an indication given from said client;

searching a node of said actual execution workflow corresponding to a node of said virtual workflow specified by said client, based on said workflow link definition; and

outputting a progress state of said searched node of said actual execution workflow as a progress state of said specified node of said virtual workflow to said client.

9. (Currently Amended) The method as claimed in claim 6, wherein said virtual workflow definition holds information about a type of a privilege of operation by said client to said actual workflow definition at each node of said virtual workflow, said type being at least one privilege selected from a display privilege, a reference privilege and an input privilege.

10. (Currently Amended) The method as claimed in claim 6, wherein each of said nodes contained in said virtual workflow definition is linked with a node selected from a plurality of actual workflow definitions.

11. (New) The method as claimed in claim 1, further comprising the steps of:

if a privilege of reference to the acquired node is not permitted to a user requesting the progress state of the specified node, searching the nodes of said actual execution workflow for a previous node closest to the acquired node and having a privilege of reference permitted to the user; and

outputting a progress state of the previous node as a progress state of the specified node of said virtual workflow.